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February 22, 1999

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, SW Room TWB-204
Washington, D.C. 20554

Re: Notice of Ex Parte meeting: In the matter of Access Charge reform, CC Docket No. 96-262; Price Cap Performance Review for LECs, CC Docket No.94-1; MCI Telecommunication Corp. Emergency Petition for Prescription, CC Docket No. 97-250; 96-45 Federal State Joint Board on Universal Service; and Consumer Federation of America Petition for Rulemaking, RM-9210.

Dear Ms. Salas:

On January 26, 1999, AT&T met with staff members from the Competitive Pricing Division of the Common Carrier Bureau. At that time, AT&T reviewed its productivity analysis as filed in reply comments in the above referenced dockets. The Staff requested that AT&T supply the work-papers underlying its analysis. Attachment #1 and the attached disk contain the detailed explanation and spreadsheets requested by the Staff that further support AT&T's conclusions as presented on January 26, 1999.

In response to a staff question regarding productivity, AT&T is submitting the results of a study prepared by Dr. R. Norsworthy (Attachment #2) that calculates Total Factor Productivity Growth for the computer and semi-conductor industries. The results for these industries, that have TFP growth of between 16 and 21 percent, have been prepared in a manner entirely comparable to the measurement of TFP for the LECs.

Two copies of this Notice are being submitted to the Secretary of the Commission in accordance with Section 1.1206(a)(2) of the Commission's rules.

Sincerely,

Brian W Masterson

Attachments
cc: Jane Jackson
Rich Lerner
Jay Atkinson
Anthony Bush w/disk
Chris Barnekov w/disk
Steve Spaeth

ADJUSTMENTS TO THE USTA STUDY

Attachment #1

Use of Published Data

The X-Factors shown on the attached table reflect currently available public data which differs from the data used by USTA in the following respects:

First, USTA failed to use publicly available data on intrastate DEMs for 1996, but instead projected intrastate DEMs for both 1996 and 1997 based on an assumed 4.5% growth rate. In addition, USTA's "revised" number for special access lines in 1997 was substantially less than the number shown in the Preliminary Statistics for Communications Common Carriers.

The attached table also contains updated numbers from the final version of the Statistics for Communications Common Carriers (SOCC) for 1997, which was issued after the USTA and AT&T studies were submitted. The following items were revised from the Preliminary SOCC numbers used in these studies:

- The number of switched and special access lines increased slightly.
- The number of local calls was revised, presumably to correct for a number that had been misreported by NYNEX.
- Total operating expenses declined slightly.

In comparison with the data used by USTA, the revised number for special access lines is substantially greater than USTA's figure, while the revised number of local calls is slightly above that of USTA.

Adjustment for High LEC Earnings

As AT&T and several other parties showed in their reply comments, soaring RBOC earnings in 1996 and 1997 are inappropriately treated as an increase in the price of LEC inputs in the FCC model, which serves to reduce the X-factor for those years.[1] The surge in earnings had the effect of increasing the "capital rental price", which results in a higher input price index and lower X-Factor. To adjust for this, AT&T estimated what the capital rental price and total revenue would have been in 1996 and 1997 had the RBOCs' overall combined (interstate and intrastate) rate of return been equal to 10.57%, its average for the 1990-95 period. Since the LECs' current cost of capital is undoubtedly below 10.57%, this adjustment represents a conservative approach. Its main effect is to reduce the LEC input price index, and hence the "input price differential" component of the X-Factor. In addition, the input quantity index is reduced slightly because of changes in the weights assigned to each input.

Explanation: The capital rental price, which constitutes the price index for capital inputs, is calculated as "property income" divided by the capital stock (calculated on the basis of a "perpetual inventory" model) as of the end of the prior year.[2] Property income, in turn, is defined as total revenue minus total operating expenses. Somewhat more than half of property income consists of depreciation and amortization, while its other major components include net income, interest expense, and taxes. When estimating the impact of any adjustment on RBOC earnings, it is necessary to account for variations in taxes. Some taxes vary with income (federal, state & local income taxes), some vary with revenues (sales,

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[1] Reply Comments, Dockets 96-262, 94-1, and 97-250 (11/9/98): AT&T at 19, MCI WorldCom at 27-28, Ad Hoc Telecommunications Users Committee at 17-19.

[2] The capital rental price is shown on Chart D9 in the column labeled "Capital charge to customers."

Interstate-Only Estimates

X-Factors for interstate services are calculated on chart D1-B by calculating TFP growth on the basis of growth in interstate output instead of growth in total output. The implicit assumption here is that interstate inputs grow at the same rate as total inputs. This assumption can be modified based on information regarding the portion of LEC costs allocated to the interstate jurisdiction via the separations process. In AT&T's reply comments, jurisdictional separations information was used to obtain a measure of interstate input and TFP growth.[5] These calculations are shown on Charts D10-C and D11-S, with the resulting interstate X-Factors calculated on Chart D1-C. The interstate-only X-Factors are then adjusted for high earnings and access reform in the manner described above.

[5] AT&T Reply Comments, Dockets 96-262 and 94-1 (11/9/98), Attachment A, pp. 7-9.

Productivity Growth in High Technology Industry
Prepared by John R. Norsworthy for AT&T
February 17, 1999

The attached table shows rates of output, input and TFP Growth for the computer and semiconductor industries. The purpose of the TFP measurement is to provide a basis of comparison for growth in the LECs' interstate and total company TFP. The data are computed from the National Bureau of Economic Research (NBER) Manufacturing Productivity Database. This database was originally prepared for the Bureau of the Census' Center for Economic Studies, and has since been updated using official U.S. government investment, depreciation, price and quantity statistics from the Census Bureau, Bureau of Labor Statistics, and Bureau of Economic Analysis. The methods are described in "The NBER Manufacturing Productivity Database," Technical Working Paper 205, October 1996, which may be obtained from the NBER web site at www.nber.org under the heading "Online Data". Update notes describing the latest revision (11/25/98) are also available there. The data for approximately 440 manufacturing industries, including semiconductors and computers, may also be obtained at the same site.

The price index methods underlying the price calculations for the computer and semiconductor industries are applications of hedonic price index adjustments based on performance changes in the semiconductor chips and computers. The details of these methods are discussed in a number of papers published in the last ten years. The major source illustrating the hedonic methods applied there are described in ***Price Measurements and Their Uses***, edited by Murray F. Foss, Marilyn E. Manser and Allen H. Young, University of Chicago Press, 1993 and the references therein.

The productivity calculations applied here are completely consistent with those in the Performance Based Model submitted by AT&T in the price cap proceedings, and with the FCC's prescription for TFP measurement for the LECs. Minor difference: real capital input for equipment and structures (each based on NBER's application of the usual perpetual inventory method) was aggregated by adding the respective constant dollar values.[1] Labor input is based on total employment; the price of labor is payroll per worker. Energy and materials expenditures are divided by their respective price indexes to obtain quantities of energy and materials inputs. Inputs are aggregated by the Fisher Ideal quantity index procedure. Output is measured as the value of shipments divided by the price index for shipments. While a laborious adjustment to output could be made for inventory change, the inventory data in the NBER file is total inventory (finished goods, work in

[1] The aggregate capital stock in the FCC prescription is deflated as a single unit. In the NBER capital stock data, equipment and structures are deflated separately and then aggregated. This difference would be expected to result in only minor changes in the growth rates in a period of 11 years, if other factors affecting the calculation remain constant; say, less than 0.2% per year in the growth of the capital input, and 0.1% per year in TFP.

process and raw materials). Only the change in finished goods affects directly the level of production. An adjustment would therefore require more data than is supplied by NBER in its data file. Moreover, inventory change is significant primarily in the very short run, and is not regarded as very important in either of these industries in terms of its effect in driving a wedge between shipments and the volume of production.

In summary, the TFP measures for the computer and semiconductor industries are entirely comparable to those prepared for the LECs according to the FCC method, and should be so interpreted.

Rates of Growth: High Technology Industries

Industry	Time Period	TFP Growth	Output Growth	Input Growth
Computers	1967-94	21.01%	21.26%	0.25%
Semiconductors	1967-94	16.81%	17.19%	0.38%
Computers	1984-94	17.41%	16.69%	-0.73%
Semiconductors	1984-94	16.35%	16.58%	0.23%

Source: Calculated from NBER productivity data set compiled from government statistics as described in the text.